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ABSTRACT

For almost half a century the United States military services have incorporated formal literacy programs into job training for those enlistees who are less than fully qualified. Over the years, several successful job-specific reading programs have evolved. In 1975, the Army began the Functional Literacy (FLIT) Program, a program based on a psycholinguistic, information-processing model designed to enable soldiers to use their job reading materials effectively. The program consists of two categories of exercises: "Reading To Do" (instruction in locating information for immediate use); and "Reading To Learn" (instruction in using metacognitive reading skills for problem solving). Another job literacy program--the Experimental Functional Skills Program in Reading (XFSP/Read)--focuses on teaching "Reading To Learn" processes that facilitate input and retrieval of job knowledge from long-term memory, in addition to providing instruction in "Reading To Do" activities. The Basic Skills Education Program (BSEP) in reading, a third successful job literacy effort, utilizes the results of a task analysis of 95 different military occupations, and tailors instruction to those job-reading tasks common to the most populous military occupations overseas. The text, integrating knowledge of military culture and interpersonal skills with job information, is used in combination with exercise modules and mastery tests to teach job-specific "Reading To Learn" and "Reading To Do" tasks. All three programs succeed in teaching job-specific reading skills to intermediate literates. (Fifteen references are appended.) (MM)

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LESSONS LEARNED
ABOUT WORKPLACE LITERACY
FROM MILITARY JOB-SPECIFIC READING PROGRAMS

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ABSTRACT

This paper describes the chronological development of job literacy training in the U.S. military over the past fifty years. It reviews the background research that led to the decision of the armed forces to investigate the kinds of literacy training which effectively translate to improved job performance. Three functional-contextual literacy programs are examined: Functional Literacy Program (FLIT, 1975); Experimental Functional Skills Program in Reading (XFSP/Read, 1986); and Basic SKills Education Program (BSEP Reading, 1987). The results of each program are discussed, as well as their shared characteristics: a goal of improved job performance and promotion potential, an identification of skills through prior job task analyses, the use of actual job materials to teach skills contextually to enhance transfer of learning to job performance, and the inclusion of information-locating and higher order problem-solving processes in job-specific curriculum.

LESSONS LEARNED
ABOUT WORKPLACE LITERACY
FROM MILITARY JOB-SPECIFIC READING PROGRAMS

National concern over the rapidly shrinking pool of qualified applicants for entry-level jobs has focused attention on the need for job literacy training. Traditionally, instructional materials for adult learners address the non-reader or marginal literate and are "job-related" only to the extent that they thematically explore occupational career possibilities. What is needed to solve the growing employment problem in today's society is instruction in on-the-job reading processes through programs designed to qualify or retrain the large number of unemployable intermediate literates for the job market.

For almost half a century the United States military services have incorporated formal literacy programs into job training for those enlistees who are less than fully qualified. The ultimate goal of these programs is to increase levels of job performance. From a variety of military research and development projects conducted over the years, several highly successful job-specific reading programs have evolved. They are based on findings from job task analyses and super-impose reading instruction onto actual job reading materials. Adult basic

education and industrial training programs seldom have the extensive funding and time needed to create job literacy programs such as those used by the military. However, many aspects of military job literacy training can easily be adapted to the development of civilian job literacy programs.

Military Job Literacy Training

Because of the need for manpower, various branches of the Armed Forces have provided literacy training programs for under-educated enlistees since World War II. Initially, remedial programs were developed to increase general reading ability. The term "functional illiterate" was coined to describe those recruits or draftees who had not attained reading skills comparable to those of a student entering the fifth grade of school. These enlistees were enrolled in six- to eight-week intensive basic skills literacy programs for the purpose of increasing their literacy levels to make them "functional" job performers. Subsequent research revealed that service members' job performance did not significantly improve following this traditional instruction in reading (Hagen & Thorndike, 1953; Goffard, 1956; Caylor, 1976; Duffy, 1976; Groff, 1976). As a result, the military began to investigate the actual literacy levels and skills needed to prepare enlistees to function effectively in specific military occupations.

From 1960 to the present, the Army, Navy, Air Force, and Marine Corps have independently developed numerous job-related literacy training programs.

Functional Literacy (FLIT) Program

In 1971, the Army sponsored research which led to the development of the landmark Functional Literacy (FLIT) Program (Sticht, 1975b). Based on a psycholinguistic, information-processing model, the curriculum was designed to enable soldiers to effectively use their job reading materials. Seven specific military occupations were analyzed to determine the types of job reading tasks performed and the readability levels of job materials used. Instructional job literacy materials were then created for each of the seven occupations. They consisted of two categories of exercises which employed actual job reading materials. The first category, "Reading to Do," instructed students in how to locate information in manuals, follow directions, and complete job forms. The second category, "Reading to Learn," helped students master and remember the information , or "knowledge base," they would need on the job. Evaluation of the program showed that soldiers' job reading scores increased an average of 2.5 grade levels after 120 hours of instruction, and 80% of the gain was retained for longer than 3.5 months (Sticht, 1975a).

Experimental Functional SKills Program in Reading (XFSP/Read)

During the next ten years, the Navy researched and developed a series of job literacy programs derived from the FLIT prototype (Sticht et al., 1986). The latest of these, the Experimental Functional Skills Program in Reading (XFSP/Read) focuses on teaching "Reading to Learn" processes that facilitate input and retrieval of job knowledge from long-term memory. It also provides instruction in "Reading to Do" activities, which involve only short-term memory and less complex information processing. Both categories of job reading activities are taught by using a specially constructed Navy job knowledge base, as well as actual job materials. The knowledge base materials contain information about naval history, conduct, shipboard organization, safety, and so forth. Research done prior to curriculum development indicted that this knowledge enhances perfromance of job reading tasks and increases scores on promotion tests (Sticht, Fox, Hauke, and Zapf, 1976). Job literacy training becomes more efficient when job knowledge and job reading tasks are taught simultaneously. Sailors participating in XFSP/Read can improve their job performance and promotional potential quickly because the contextual job background knowledge needed for comprehension of on-the-job reading has been entered into long-term memory (Craik & Lockhart, 1972; Anderson, 1979; Mayer, 1984). Results from program evaluation show average gains of 20% on separate posttests of job knowledge and job reading tasks, and an average

gain of one grade level on the Gates MacGinitie General Reading Test after 30 to 40 hours of instruction with XFSP/Read materials (Sticht et al., 1986).

Basic Skills Education Program (BSEP) Reading

Another successful job literacy effort which evolved from the FLIT program is the Army's Basic SKills Education Program (BSEP) in Reading, currently in use throughout Europe, the Near East, and Panama (Philippi, 1987). It utilizes the results of a lengthy task analysis of 95 different military occupations, begun for the Army in 1978. (The task analysis was conducted under Army contract by RCA Services Company, and required several years to complete. A computer-based Army literacy program, the Job Skills Education Program, is presently being developed from the same research for use in the United States.) The BSEP Reading program tailors instruction to those job reading tasks common to the most populous military occupations overseas. More than 250 selections from job reading materials for those occupations were excerpted from field manuals, military forms, and training materials. These were compiled into one text along with articles from military publications dealing with the soldier as citizen, teamwork, and leadership. Integrating knowledge of military culture and interpersonal skills with job information, the text functions as a data base. It is used in combination with exercise modules and mastery tests to teach job-specific "Reading

to Do" and "Reading to Learn" tasks. Prior to curriculum development, job reading materials were studied by the author to determine how traditional reading processes, like finding the main idea, using context clues, or making inferences, are utilized in specific military reading tasks. Competency-based lessons, using a metacognitive approach, were then designed to teach generic reading skills as they apply to military reading tasks. The program meets the job literacy training needs of a wide populuation because it provides instruction in reading processes applications common to many military occupations.

The military job reading materials used in BSEP Reading have readability levels ranging from grade 10 to grade 14.5, as measured by the FORCAST technical readability index (Sticht, 1975b). They are not simplified or rewritten for use in the program because to do so would make them contrived and primerish, and they would no longer qualify as actual job reading materials. Soldiers entering the program with reading abilities at an average grade level of 8.7 are able to master reading skills using these higher level job materials because the accompanying lessons are written at grade level 8.5 and the soldiers' job knowledge facilitates comprehension (Sticht, 1982). Since ungraded job reading materials are the basis of instruction, gains are measured in percentage of job reading tasks mastery rather than in grade levels. Soldiers who perform at levels of less than 75% mastery on a standardized, criterion-referenced job

literacy task test participate in the BSEP Reading program. Posttest scores show an average gain in job-specific reading skills of 36% after 60 hours of instruction. In addition, attrition rates were 31% lower and reinlistment rates were 27% higher for those soldiers who participated in the BSEP Reading program (Harman, 1987). The Army interprets this as a positive influence of job literacy training on job retention and promotion potential.

During a recent program evaluation, the reading portion of the Test of Adult Basic Education (TABE) and a predictor version of the General Technical (GT) portion of the Armed Forces Classification Test were also administered to soldiers enrolled in BSEP Reading. Soldiers showed average gains of 1.8 grade levels on the TABE and 13% on the GT Predictor (Philippi, 1987). These gains on traditional, standardized reading tests of word knowledge and paragraph comprehension, although preliminary findings, indicate a carry-over of reading skills improvement from job-specific literacy training to traditional reading materials.

Summary

The three militray job literacy programs discussed above share some common features. First, they have a common goal of improved job performance and promotion potential for

participants. Second, they are based on prior job task analysis to determine which reading skills are embedded in job tasks and how they apply to job performance. Third, they all use actual job reading materials to maximize the benefits of learners' prior job knowledge and to increase the job knowledge base for future use. Finally, they succeed in teaching reading skills to intermediate literates in ways they are used on the job, that is, locating information for immediate use ("Reading to Do") and using metacognitive reading skills for problem solving ("Reading to Learn").

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